

PROCEEDINGS
OF THE
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SEVEN NEW MALAYAN BATS.

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Among the Malayan bats in the United States National Museum are the following seven species that have not hitherto been described. All but two of them were collected and presented by Dr. W. L. Abbott.

Cynopterus princeps sp. nov.

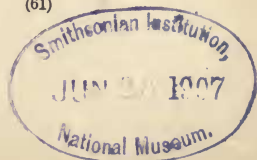
Type.—Adult female (skin and skull). No. 141,235, United States National Museum. Collected at Mojeia River, Nias Island, west Sumatra, March 10, 1905, by Dr. W. L. Abbott. Original number, 4020.

Characters.—Slightly larger than the Javan *Cynopterus titthæcheilus*; color not as bright; skull with shorter rostrum; cheekteeth heavier, with more squarish crowns, the last premolar and first molar of lower jaw with small but distinct median cusp.

Color.—Type: Upperparts a peculiar brown intermediate between the wood-brown and hair-brown of Ridgway but darker than either, the crown slightly darker than back; individual hairs pale isabella-color at base. Sides of neck raw-sienna, this color extending across throat but becoming duller beneath, where the fur is sparser. Underparts elsewhere broccoli-brown with a faint yellowish tinge along sides. Ears and membranes blackish, unmarked.

Skull and teeth.—The skull rather closely resembles that of *Cynopterus titthæcheilus*, but the rostrum is distinctly shorter and the mandibular ramus is deeper. Cheekteeth heavier and more squarish than those of the Javan animal, the crown of the first and second lower molar with a low but distinct terete cusp about .3 mm. in diameter rising from crushing surface near middle.

Measurements.—Type: Head and body, 143; tail, 10; tibia, 30; foot, 20.5; forearm, 84.4; thumb, 35.9; second finger, 61.4; third finger, 143; fourth finger, 112; fifth finger, 110; skull, greatest length, 38.2; condylo-basal length, 36.4; basilar length, 32.6; palatal length, 20.2; zygomatic breadth, 25.4; breadth of braincase, 15.6; interorbital constriction, 6.7; postorbital constriction, 5.8; mandible, 28.8; depth of mandible at front of anterior molar, 3.6; maxillary tooththrow exclusive of incisors (alveoli), 12.2; mandibular tooththrow exclusive of incisors (alveoli), 13.8.



Specimens examined.—Three, all from the type locality.

Remarks.—This very distinct species needs comparison with the Javan *Cynopterus titthæcheilus* only, an animal from which it differs in the shorter, broader rostrum and in the well-developed cusps on the crowns of pm_4 and m_1 . Among 25 skulls of the Javan animal 17 show traces of a cusp on the crown of m_1 , while in only 3 is there any indication of such a structure in pm_4 .

***Cynopterus major* sp. nov.**

Type.—Adult male (skin and skull). No. 141,236, United States National Museum. Collected at Mojeia River, Nias Island, west Sumatra, March 10, 1905, by Dr. W. L. Abbott. Original number, 4021.

Characters.—A large species considerably exceeding *Cynopterus sphinx* in size though not equal to *C. titthæcheilus*. Teeth broad, as in *Cynopterus titthæcheilus*, but not as large, and pm_4 and m_1 without trace of secondary cusp.

Color.—The color so closely resembles that of *Cynopterus princeps* that no detailed description is required. Brown of upperparts slightly more yellowish than in the larger animal and neck slightly darker. Ears and membranes similarly unmarked.

Skull and teeth.—Except for its smaller size the skull resembles that of *Cynopterus titthæcheilus*, having the same heavy rostrum and broad palate as compared with *C. sphinx*. Teeth differing from those of *C. sphinx* in the greater strength and breadth of the large premolars and molars.

Measurements.—Type: Head and body, 122; tail, 8; tibia, 29.3; foot, 16.8; forearm, 76.4; thumb, 31.3; second finger, 50.4; third finger, 123; fourth finger, 94; fifth finger, 95; skull, greatest length, 33.8 (37.3)*; condylo-basal length, 32.2 (35.2); basilar length, 29 (31.8); palatal length, 17 (19.4); zygomatic breadth, 22.3 (24); breadth of braincase, 14.5 (14.8); interorbital constriction, 7 (7.6); postorbital constriction, 6.2 (6); mandible, 25.9 (28); depth of mandible at front of anterior molar, 3.2 (3.4); maxillary toothrow exclusive of incisors (alveoli), 11.1 (11.4); mandibular toothrow exclusive of incisors (alveoli), 12.8 (13.3).

Specimens examined.—Thirty-one (6 skins), all from Nias.

***Cynopterus pagensis* sp. nov.**

Type.—Adult female (skin and skull). No. 121,581, United States National Museum. Collected on North Pagi Island, west Sumatra, November 12, 1902, by Dr. W. L. Abbott. Original number, 2028.

Characters.—Exactly similar to *Cynopterus major* except that the size is much less.

Measurements.—Type: Head and body, 106; tail, 4; tibia, 24.6; foot, 14.7; forearm, 69.8; thumb, 27; second finger, 46.2; third finger, 109; fourth finger, 89.7; fifth finger, 87.7; skull, greatest length, 30.8 (33.4)†;

* Measurements in parenthesis are those of an adult male *Cynopterus titthæcheilus* from West Java (No. 141,623).

† Measurements in parenthesis are those of an adult female *Cynopterus major* (No. 141,234.)

condylobasal length, 29.9 (32.2); basilar length, 26.9 (29.3); palatal length, 15.9 (16.8); zygomatic breadth, 19.4 (20.8); breadth of braincase, 12.9 (13.7); interorbital constriction, 6.5 (6.9); postorbital constriction, 6.5 (6.6); mandible, 23 (25); maxillary tooththrow exclusive of incisors (alveoli), 9.9 (10.8); mandibular tooththrow exclusive of incisors (alveoli), 11 (12.1).

Specimens examined.—Thirteen (2 skins), all from North Pagi Island.

***Cynopterus minutus* sp. nov.**

Type.—Adult male (skin and skull). No. 141,240, United States National Museum. Collected on Nias Island, west Sumatra, March 11, 1905, by Dr. W. L. Abbott. Original number, 4043.

Characters.—Similar to the Javan *Cynopterus melanocephalus* (Temminck) but not as small and with no contrasts of color between the back, head, and underparts.

Color.—Type: The color differs very slightly from that of *Cynopterus major* and *C. pagensis*, except that the yellowish of the neck more extensively suffuses the sides, shoulders, and front half of back. Head very nearly fawn-color. Belly and chest broccoli-brown.

Skull and Teeth.—The skull and teeth show no peculiarities other than their small size. In form they are throughout similar to *Cynopterus sphinx*.

Measurements.—Type: Head and body, 83; tail, 2; tibia, 18.8; foot, 13; forearm, 52.4; thumb, 20; second finger, 36.7; third finger, 85; fourth finger, 66; fifth finger, 61; skull; greatest length, 26.2; condylobasal length, 25; basilar length, 22.5; palatal length, 12.9; zygomatic breadth, 16.4; breadth of braincase, 11.5; interorbital constriction, 5.3; postorbital constriction, 6; mandible, 19.5; maxillary tooththrow exclusive of incisors (alveoli), 7.8; mandibular tooththrow exclusive of incisors (alveoli), 8.9.

Specimens examined.—Twelve (one skin), all from Nias Island.

***Pteropus baveanus* sp. nov.**

Type.—Adult male (skin and skull). No. 125,482, United States National Museum. Collected on Bawean Island, Java Sea, July 19, 1904, by W. Grasshoff. Original number, 16.

Characters.—A large, dark colored member of the *Pteropus hypomelanus* group; forearm about 160 mm.

Color.—Type: Back and underparts blackish, the former distinctly grizzled with gray and lightening to bistre posteriorly, the latter slightly varied with highly glossed, pale russet annulations, particularly on chest and belly. Mantle russet, strongly suffused with blackish. Head blackish. Ears and membranes black.

Skull and teeth.—The skull and teeth resemble those of *Pteropus lepidus* in form, but are throughout somewhat larger.

Measurements.—Type: Head and body, 272; tibia, 73.4; foot, 47.4; forearm, 160; thumb, 59; second finger, 107; third finger, 285; fourth finger, 225; fifth finger, 202; skull, upper length, 63.4; condylobasal length, 64.6; median palate length, 32.8; zygomatic breadth, 35; interorbital constriction, 8.8; postorbital constriction, 7.2; breadth of braincase, 23; man-

dible, 52.6; maxillary tooththrow exclusive of incisors (alveoli), 25; mandibular tooththrow exclusive of incisors (alveoli), 28.6.

Specimens examined.—Fourteen, all from Bawean.

Remarks.—The specimens show no special variations either in color or in size. The shortest forearm that is certainly uninjured measures 151 mm. This is decidedly the largest member of the *Pteropus hypomelanus* group yet discovered. Its size and dark color readily distinguish it from its allies.

***Pteropus niadicus* sp. nov.**

1889. *Pteropus nicobaricus* Modigliani, Ann. Mus. Civ. di Stor. Nat. di Genova (2) VII, p. 239.

Type.—Adult male (skin and skull). No. 141,233, United States National Museum. Collected at Teliwaa, Nias Island, west Sumatra, March 5, 1905, by Dr. W. L. Abbott. Original number, 3981.

Characters.—Similar to *Pteropus nicobaricus* (Zelebor), but with back gray instead of black, and head not darker than mantle.

Color.—Type: Back a grizzled gray rather closely resembling the hair-brown of Ridgway, with a slight yellowish cast along sides and a darker wash in median region. Mantle light russet heavily clouded with blackish, the latter predominating. On head the black is less noticeable and the russet becomes paler, so that the mantle is noticeably darker than the head. Underparts blackish anteriorly, russet along middle of chest and belly, light hair-brown on flanks and under side of thighs. Ears and membrane black.

Skull and teeth.—The skull and teeth do not differ appreciably from those of *Pteropus nicobaricus*.

Measurements.—Type: Head and body, 270; tibia, 68.4; foot, 52.4; forearm, 152.4; thumb, 66.2; second finger, 114; third finger, 287; fourth finger, 234; fifth finger, 205; skull, upper length, 69; condylobasal length, 69.4; median palatal length, 34.8; zygomatic breadth, 38.2; interorbital constriction, 9.8; postorbital constriction, 8; breadth of braincase, 23.6; mandible, 56.4; maxillary tooththrow exclusive of incisors (alveoli), 26.8; mandibular tooththrow exclusive of incisors (alveoli), 30.4.

Specimens examined.—Three, all from Nias Island.

Remarks.—Though nearly related to *Pteropus nicobaricus* this species is easily distinguishable by its gray back and light colored head. In ten skins of *Pteropus nicobaricus* the head is without exception conspicuously darker than the mantle, while the back is almost black.

***Kerivoula depressa* sp. nov.**

1892. *Kerivoula hardwickii* Thomas, Ann. Mus. Civ. di Stor. Nat. di Genova, (2) X, p. 927.

Type.—Adult female (in alcohol). No. 141,234, United States National Museum. Collected at Biapo, Carin Hills, northeast of Tounghoo, southern Burma, by L. Fea.

Characters.—Similar to *Kerivoula hardwickii* but with smaller ears, shorter

tibia and smaller foot; skull with braincase nearly $1\frac{1}{2}$ times as broad as deep.

Color.—After its long immersion in alcohol the fur is lighter and yellower than that of four Javan skins of *Kerivoula hardwickii*. Upperparts between buff and cream-buff, the tips of the hairs darker, producing a distinct clouding of broccoli-brown. Underparts similar but without the clouding. Hairs everywhere prouts-brown through basal half. Ears and membranes uniform brown.

Skull and teeth.—The skull is readily distinguishable from that of *K. hardwickii* by its low, flattened braincase (see measurements) and narrower palatal and narial emarginations. Teeth not obviously different from those of the Javan animal.

Measurements.—Type: Head and body, 32.6; tail, 428; tibia, 15.4; foot, 6; forearm, 32.8; thumb, 7; second finger, 34; third finger, 70; fourth finger, 48; fifth finger, 48; ear from meatus, 11.6; ear from crown, 10; skull, greatest length, 13.5 (14.2)*; condylobasal length, 12.6 (13.4); median palate length, 6.2 (6.5); zygomatic breadth, 8.2 (8.7); interorbital constriction, 3 (3); breadth of braincase, 7 (7.2); depth of braincase including audital bullæ, 5.5 (6.5); mandible, 9.5 (10); maxillary tooththrow exclusive of incisors (alveoli), 5.2 (5.8); mandibular tooththrow exclusive of incisors (alveoli), 5.7 (6.2).

Specimens examined.—Two, the type from Burma, and a second specimen (female, No. $\frac{17292}{188}$) from Cambodia.

* Measurements in parenthesis are those of an adult female *Kerivoula hardwickii* from western Java (No. 141,590).